

WHAT IS CLAIMED IS:

1. An isolated peptide selected from the group consisting of:
(X1)_nEVEKIKTTVKESATEEKLT¹PVX2L(X2)_m (SEQ ID NO: 1);
(Y1)_nEVAALQVDRKVADEEKQSYDAV(Y2)_m (SEQ ID NO: 2),

wherein

n and m independently represent 0 or 1;

X1, X2 and X3 are independently defined as follows

X1 is ~~GVKETPQQKYQRLLHEVQELTT (SEQ ID NO: 3), or
VKETPQQKYQRLLHEVQELTT (SEQ ID NO: 4), or
KETPQQKYQRLLHEVQELTT (SEQ ID NO: 5), or
ETPQQKYQRLLHEVQELTT (SEQ ID NO: 6), or
TPQQKYQRLLHEVQELTT (SEQ ID NO: 7), or
PQQKYQRLLHEVQELTT (SEQ ID NO: 8), or
QQKYQRLLHEVQELTT (SEQ ID NO: 9), or
QKYQRLLHEVQELTT (SEQ ID NO: 10), or
KYQRLLHEVQELTT (SEQ ID NO: 11), or
YQRLLHEVQELTT (SEQ ID NO: 12), or
QRLLHEVQELTT (SEQ ID NO: 13), or
RLLHEVQELTT (SEQ ID NO: 14), or
LLHEVQELTT (SEQ ID NO: 15), or
LHEVQELTT (SEQ ID NO: 16), or
HEVQELTT (SEQ ID NO: 17), or
EVQELTT (SEQ ID NO: 18), or
VQELTT (SEQ ID NO: 19), or
QELTT (SEQ ID NO: 20), or
ELTT (SEQ ID NO: 21), or
LTT, or
TT, or
T:~~

X2 is V or L, and

X3 is AKOLAAL (SEQ ID NO: 22), or

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AKQLAA (SEQ ID NO: 23), or
AKQLA (SEQ ID NO: 24), or
AKQL (SEQ ID NO: 25), or
AKQ, or
AK, or
A;

and

Y1 and Y2 are independently defined as follows

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Y1 is GEKETPVQKCQRLQIEMNELLN (SEQ ID NO: 26), or
EKETPVQKCQRLQIEMNELLN (SEQ ID NO: 27), or
KETPVQKCQRLQIEMNELLN (SEQ ID NO: 28), or
ETPVQKCQRLQIEMNELLN (SEQ ID NO: 29), or
TPVQKCQRLQIEMNELLN (SEQ ID NO: 30), or
15 PVQKCQRLQIEMNELLN (SEQ ID NO: 31), or
VQKCQRLQIEMNELLN (SEQ ID NO: 32), or
QKCQRLQIEMNELLN (SEQ ID NO: 33), or
KCQRLQIEMNELLN (SEQ ID NO: 34), or
CQRLQIEMNELLN (SEQ ID NO: 35), or
QRLQIEMNELLN (SEQ ID NO: 36), or
20 RLQIEMNELLN (SEQ ID NO: 37), or
LQIEMNELLN (SEQ ID NO: 38), or
QIEMNELLN (SEQ ID NO: 39), or
IEMNELLN (SEQ ID NO: 40), or
EMNELLN (SEQ ID NO: 41), or
25 MNELLN (SEQ ID NO: 42), or
NELLN (SEQ ID NO: 43), or
ELLN (SEQ ID NO: 44), or
LLN, or
LN, or
30 N; and

Y2 is VATVISTAR (SEQ ID NO: 45), or

VATVISTA (SEQ ID NO: 46), or

VATVIST (SEQ ID NO: 47), or

VATVIS (SEQ ID NO: 48), or

VATVI (SEQ ID NO: 49), or

5 VATV (SEQ ID NO: 50), or

VAT, or

VA, or

V, and

derivatives thereof having at least about 90% identity with SEQ ID NO: 1 or SEQ ID

10 NO: 2.

2. The peptide of claim 1 which is

GVKETPQQKYQRLLHEVQELTTEVEKIKTTVKESATEEKLTPVX2LAKQLAAL
(SEQ ID NO: 51),

15 wherein X2 is as defined in claim 1.

1 3. The peptide of claim 1 which is

GEKETPVQKCQRLQIEMNELLNEVAALQVDRKVADEEKQSYDAVVATVISTAR
(SEQ ID NO: 52).

20 4. A peptide having at least 90% sequence identity with the peptide of SEQ
ID NO: 51.

25 5. A peptide having at least 90% sequence identity with the peptide of SEQ
ID NO: 52.

6. The peptide of claim 4 having only conservative amino acid substitutions
compared with SEQ ID NO: 51.

30 7. The peptide of claim 5 having only conservative amino acid substitutions
compared with SEQ ID NO: 52.

8. A peptide encoded by nucleic acid hybridizing under stringent conditions to the coding sequence of SEQ ID NO: 52 as set forth in Figure 3 (SEQ ID NO: 55).

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9. The peptide of claim 1 capable of modulating cellular proliferation.

10. The peptide of claim 1 capable of inhibiting cellular proliferation.

11. The peptide of claim 10 capable of selective inhibition of cancerous cells.

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12. Nucleic acid encoding a peptide of claim 1.

13. A vector comprising and capable of expressing the nucleic acid of claim 12.

14. A recombinant host cell transformed with the nucleic acid of claim 12.

15. A composition comprising a peptide of claim 1 in admixture with a pharmaceutically acceptable carrier.

16. A composition comprising a nucleic acid of claim 12 in admixture with a carrier.

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17. A method for inhibiting cellular proliferation comprising delivering to a target cell an effective amount of an isolated peptide of claim 1 or a nucleic acid encoding said peptide.

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18. A method for inhibiting cellular proliferation comprising delivering to a target cell an effective amount of an isolated peptide of claim 4 or a nucleic acid encoding said peptide.

19. A method for inhibiting cellular proliferation comprising delivering to a target cell an effective amount of an isolated peptide of claim 5 or a nucleic acid encoding said peptide.

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20. A method for inhibiting cellular proliferation comprising delivering to a target cell an effective amount of an isolated peptide of claim 8 or a nucleic acid encoding said peptide.

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21. The method of claim 17 wherein said target cell is a tumor cell.

22. The method of claim 21 wherein said tumor cell is a cancer cell.

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23. A method for identifying a compound capable of inhibiting cellular proliferation comprising incubating a battery of candidate compounds with a mixture of a peptide of claim 1 and a native ZW10 protein for a time and under conditions sufficient for interaction between said candidate compounds and said peptide or ZW10, monitoring said interaction, and selecting a compound that interacts with said peptide or ZW10.

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24. The method of claim 23 wherein said interaction is monitored by the yeast two-hybrid system.

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25. The method of claim 23 wherein said interaction is binding to ZW10.

26. The method of claim 23 wherein said interaction is binding to said polypeptide.

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27. A molecule identified by the method of claim 23.